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ART/Ada Design Project - Phase I Project Plan

Status Report

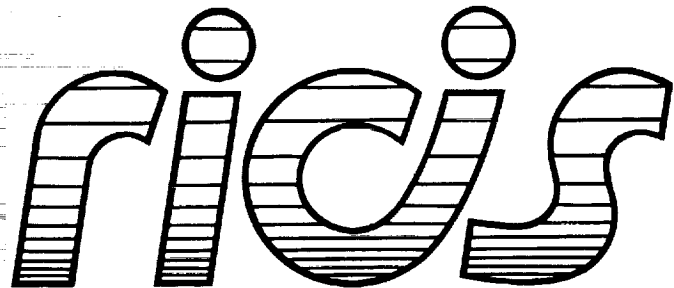
Bradley P. Allen

Inference Corporation

October 24, 1988

**Cooperative Agreement NCC 9-16
Research Activity No. SE.19**

**NASA Johnson Space Center
Information Systems Directorate
Information Technology Division**



**Research Institute for Computing and Information Systems
University of Houston - Clear Lake**

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(NASA-CR-187313) ART/Ada DESIGN PROJECT,
PHASE I: PROJECT PLAN Status Report, Mar. -
Oct. 1988 (Research Inst. for Advanced
Computer Science) 10 p CSCL 09B

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The RICIS Concept

The University of Houston-Clear Lake established the Research Institute for Computing and Information systems in 1986 to encourage NASA Johnson Space Center and local industry to actively support research in the computing and information sciences. As part of this endeavor, UH-Clear Lake proposed a partnership with JSC to jointly define and manage an integrated program of research in advanced data processing technology needed for JSC's main missions, including administrative, engineering and science responsibilities. JSC agreed and entered into a three-year cooperative agreement with UH-Clear Lake beginning in May, 1986, to jointly plan and execute such research through RICIS. Additionally, under Cooperative Agreement NCC 9-16, computing and educational facilities are shared by the two institutions to conduct the research.

The mission of RICIS is to conduct, coordinate and disseminate research on computing and information systems among researchers, sponsors and users from UH-Clear Lake, NASA/JSC, and other research organizations. Within UH-Clear Lake, the mission is being implemented through interdisciplinary involvement of faculty and students from each of the four schools: Business, Education, Human Sciences and Humanities, and Natural and Applied Sciences.

Other research organizations are involved via the "gateway" concept. UH-Clear Lake establishes relationships with other universities and research organizations, having common research interests, to provide additional sources of expertise to conduct needed research.

A major role of RICIS is to find the best match of sponsors, researchers and research objectives to advance knowledge in the computing and information sciences. Working jointly with NASA/JSC, RICIS advises on research needs, recommends principals for conducting the research, provides technical and administrative support to coordinate the research, and integrates technical results into the cooperative goals of UH-Clear Lake and NASA/JSC.

ART/Ada Design Project - Phase I Project Plan

Status Report

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Preface

This research was conducted under auspices of the Research Institute for Computing and Information Systems by Inference Corporation. Dr. Charles McKay served as RICIS research coordinator.

Funding has been provided by the Information Systems Directorate, NASA/JSC through Cooperative Agreement NCC 9-16 between the NASA Johnson Space Center and the University of Houston-Clear Lake. The NASA technical monitor for this activity was Robert T. Savely, of the Software Technology Branch, Information Technology Division, Information Systems Directorate, NASA/JSC.

The views and conclusions contained in this report are those of the author and should not be interpreted as representative of the official policies, either express or implied, of NASA or the United States Government.

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for
Subcontract 015
RICIS Research Activity SE.19
NASA Cooperative Agreement NCC-9-16

March 1988 - October 1988

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1. Project Plan and Schedule

1.1 Introduction

This chapter describes the plan and schedule for Phase I of the Ada-Based ESBT Design Research Project.

1.2 Platform

The main platform for the project is a DEC Ada compiler on VAX mini-computers and VAXstations running the VMS operating system.

1.3 Resource Requirement

The project requires the following resources:

- One principal investigator: Bradley P. Allen (BPA)
- Two researchers: James T. Badura (JTB) and S. Daniel Lee (SDL)
- Hardware: one VAXstation II, one Sun 3/260, and one IBM PS/2 Model 50 or 70.
- Ada compilers: one copy of the DEC Ada compiler for a VAXstation, one copy of the Verdix Ada compiler for a Sun, and one copy of the Alsys Ada compiler for an IBM PS/2
- C compiler: one copy of the VAX C compiler for a VAXstation, and one copy of the Microsoft C compiler for an IBM PS/2
- ART-IM Version 1.5
- ART/Ada Test cases: an extensive test suite similar to the ART-IM test suit, a benchmark program, and other small test cases.

1.4 Effort

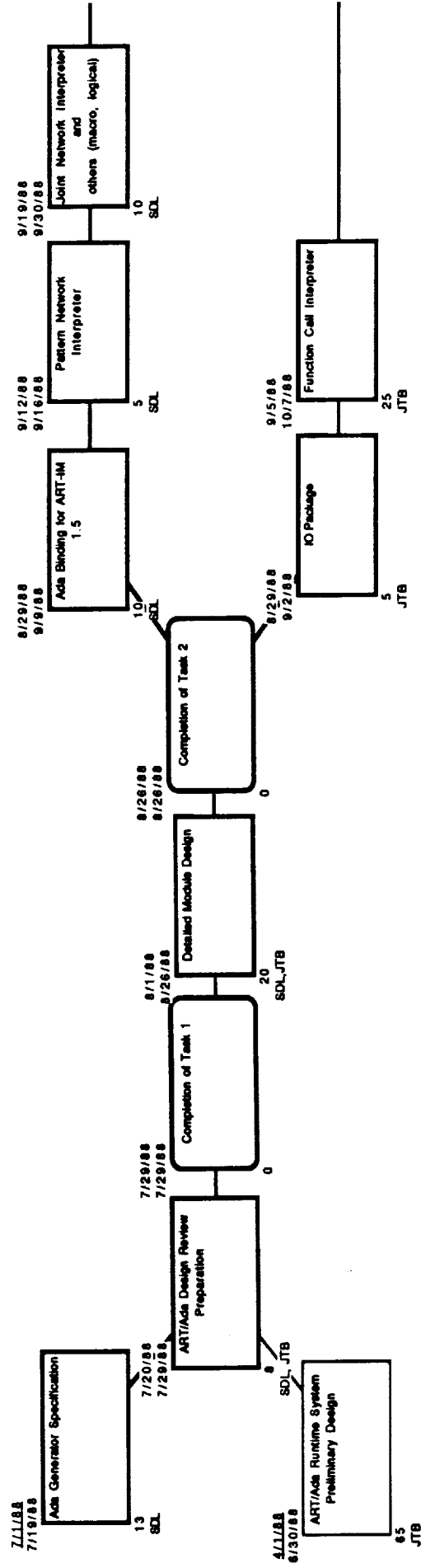
The individual effort and the lines of code (LOC) for the project is shown in the following table. If the status is marked as "DONE", the effort and LOC are the actual numbers. Otherwise, they are estimated.

ART/Ada Effort and Lines-of-Code(LOC)

Task	Package Name	Man-Hours	Man-Weeks	LOC	LOC/WEK	LOC / PERSON	JTB	STATUS
Detailed Module Design		160	4			SDL		DONE
Detailed Module Design		120	3					DONE
Ada Binding for ART-IM 1.5	art	80	2	2187	1094	2187		DONE
IO Package	io sub	40	1	503	503			DONE
Pattern Network Interpreter	pattern net sub	40	1	409	409	409		DONE
Join Network Interpreter	join net sub	64	1.6	622	389	622		DONE
Macro Package	macro sub	8	0.2	380	1900	380		DONE
Logical Dependency Package	logical sub (just a stub)	8	0.2	172	860	172		DONE
Database Manager	database sub	24	0.6	806	1343	806		DONE
Call-in Package	callio sub	4	0.1	209	2090	209		DONE
Memory Allocation Package	alloc sub	4	0.1	350	3500	350		DONE
Agenda Manager	agenda sub	8	0.2	191	955	191		DONE
Inference Engine	inter eng sub, init sub	40	1	870	870			DONE
Function Call Interpreter	interpreter sub	256	6.4	968	151	768		DONE
ART Object Manager	art object sub	56	1.4	600	429			600
ART Object Utilities	art object util sub	16	0.4	400	1000			400
Error Handler	error hdl sub	8	0.2	200	1000			200
Compiler Specific Package	compiler dcl	8	0.2	50	250			50
UI Internal Package	ui internal sub	16	0.4	200	500			200
Math Package	math sub	16	0.4	300	750			300
User Interface	lex ado, parser ado, user interface sub	40	1	500	500			500
Code Vector Conversion Design		24	0.6					
Integrated Testing I		80	2					
Ada Generator		200	5	5000	1000	5000		
Integrated Testing II		400	10					
Total		1720	43	14917	347	11094		4323

1.5 Schedule

The PERT chart for the entire project life cycle is shown in the following pages:



SDL - S. Daniel Lee
JTB - J. T. Badura

